

Interim Guidance on Alternative Facemasks

CURRENT AS OF MARCH 27, 2020

Alternative facemasks can be homemade facemasks, or manufactured facemasks that are not regulated by the U.S. Food and Drug Administration (FDA). There are many versions of non-FDA regulated facemasks, and facilities should evaluate each product before use.

Every effort should be made to obtain FDA-regulated facemasks, and to comply with the CDC “Strategies to Optimize the Supply of Personal Protective Equipment (PPE) and Equipment” for the purpose of protecting the health care worker from exposure to infectious particles (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html>). Alternative facemasks can serve as source control for an individual who may be infected (transmission may occur prior to the development of overt symptoms) as an approach to limit transmission of the virus. MDH recommends the use of source control at this time for all health care workers.

When is it appropriate to wear an Alternative Facemask:

1. FDA regulated PPE supply has been exhausted and all efforts to extend PPE use has been exhausted.
2. A worker in a health care facility does not have direct patient care responsibility (e.g. dietary staff, environmental services staff, administrative staff)
3. Use by patients who do not have respiratory symptoms.
4. Use by visitors or contract staff who are providing services to a healthcare facility.
5. Asymptomatic staff who have not had exposures to known or suspect COVID-19 cases.

Design principles:

1. Build a mask that tightly encloses the area around the nose and mouth, from the bridge of the nose down to the chin, and extending onto the cheek beyond the corners of the mouth, so no gaps occur when talking or moving.
2. Use mask material that is tightly woven but breathable. Possibly double-layer the fabric.
 - Masks must be made from washable material such as fabric. Choose a fabric that can handle high temperatures and bleach without shrinking or otherwise deforming.
3. The mask should be tolerant of expected amounts of moisture from breathing.
4. Other Considerations
 - Suggested materials- outer layer tea cloth, inner layer of a microfleece to wick away moisture, and an inner tea cloth layer. Use an accordion fold to mimic a hospital mask as much as possible and use a fat woven shoelace type material to bind the sides (such as quilt binding). For straps, use elastic straps that loop behind the ears.

Use of Alternative Facemasks:

1. Alternative facemasks should be donned and doffed per usual CDC protocol.
2. Alternative facemasks should be changed when saturated from condensation build up from breathing, or after a gross contamination event.
3. Dirty and clean facemasks must be housed in separate, clearly labeled containers to prevent cross contamination.

Washing masks:

Wash dirty masks between each use. Wash in hot water with regular detergent. Dry completely on hot setting.

Design examples:

There is no standard design for a homemade facemask therefore, consider innovation using the design principle above. Below are example designs for consideration:

Videos:

- Facemask Kit – Providence St. Joseph Health - <https://vimeo.com/399324367/13cd93f150>
- How to sew a simple Fabric Facemask (YouTube)- https://www.youtube.com/watch?v=sOJ_sm137fQ

Written Instructions:

- Allina Health – How to make a facemask <https://www.allinahealth.org/-/media/allina-health/files/mask-sewing-how-to.pdf>
- Facemask Directions Developed by Joan Glass: <https://www.leadingagewa.org/wp-content/uploads/sites/296/2020/02/Instructions.pdf>
- Facemask: A picture tutorial: <https://buttoncounter.com/2018/01/14/facemask-a-picture-tutorial/>
- Taiwanese Doctor Teaches How to DIY Cloth Face Mask: <https://mustsharenews.com/cloth-face-mask/>
- Can DIY Masks Protect Us from Coronavirus?: <https://smartairfilters.com/en/blog/diy-homemade-mask-protect-virus-coronavirus/>
- DIY Homemade Masks vs. What's the Best Material?: <https://smartairfilters.com/en/blog/best-materials-make-diy-face-mask-virus/>
- DIY Cloth Facemask: <https://www.instructables.com/id/DIY-Cloth-Face-Mask/>

Articles:

- Dato, VM, Hostler, D, and Hahn, ME. Simple Respiratory Mask, *Emerg Infect Dis.* 2006;12(6):1033–1034. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3373043/>
- Rengasamy S, Eimer B, and Shaffer R. Simple respiratory protection-evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles, *Ann Occup Hyg.* 2010;54(7):789-98. <https://academic.oup.com/annweh/article/54/7/789/202744>
- Davies, Anna & Thompson, Katy-Anne & Giri, Karthika & Kafatos, George & Walker, James & Bennett, Allan. (2013). Testing the Efficacy of Homemade Masks: Would They Protect in an Influenza Pandemic?. *Disaster medicine and public health preparedness.* 7. 413-418. 10.1017/dmp.2013.43. https://www.researchgate.net/publication/258525804_Testing_the_Efficacy_of_Homemade_Masks_Would_They_Protect_in_an_Influenza_Pandemic
- Letter: CDC Emerging Infectious Diseases Simple Respiratory Mask: https://wwwnc.cdc.gov/eid/article/12/6/05-1468_article
- JAMA: Conserving Supply of Personal Protective Equipment—A Call for Ideas. https://jamanetwork.com/journals/jama/fullarticle/2763590?guestAccessKey=a9713d59-cf2a-4658-9630-13e58b1b5954&utm_source=silverchair&utm_medium=email&utm_campaign=article_alert-jama&utm_content=olf&utm_term=032020

Other Resources:

- N95 Filtering Facemask Respirator Ultraviolet Germicidal Irradiation (UVGI) Process for Decontamination and Reuse: <https://www.nebraskamed.com/sites/default/files/documents/covid-19/n-95-decon-process.pdf>